

C3 N10

US EPA RECORDS CENTER REGION 5



507541

Project Narrative Statement

I. BACKGROUND

Site Description

Discussion of location

The Fridley Commons Park Well Field (Site) is a 50 acre active well field with eight public wells, owned by the city of Fridley (City). The well field serves a population of about 29,000. The Site is located within the city of Fridley (City), Anoka County, Minnesota, approximately one mile north-northwest of the intersection of Interstate Highway 694 and Minnesota State Highway 65. The Site is approximately one mile east of the Mississippi River, approximately one mile from the federally designated Mississippi National River Reach and Recreation Area, and approximately 0.2 miles northwest of Moore Lake. The Commons Park provides recreational activities, and land use in the area surrounding the Site is mostly residential, with some areas of commercial and industrial use.

The City, and operates eight municipal water supply wells and a water treatment plant (Plant #2) at the Site. Four of the wells are open to the Prairie du Chien-Jordan (PdCJ) aquifer and (Figure 3). Water from all eight wells is blended and treated at Plant #2. A recent state-funded evaluation report has indicated that if the contaminant levels remain the same or increase, the city's blended water will exceed the MCL on multiple occasions when the four contaminated wells must be used for peaking.

Physical characteristics

Site geology

The municipal wells Nos. 6, 7, 8, and 9 which have been impacted by TCE contamination are open to the Prairie du Chien Aquifer (PdCJ) Aquifer; they intersect only a short section of the Jordan. The hydrogeologic characteristics of the Prairie du Chien Group are significant, while the hydrogeologic characteristics of the Jordan Sandstone are relatively insignificant with respect to these four wells. The fractured, sometimes karsted nature of the Prairie du Chien is extremely important in this context, and probably plays a large role in controlling ground water movement through the aquifer.

The effects of erosion on the Prairie du Chien Group and the Jordan Sandstone include several bedrock valleys in the vicinity of the Site, where the Prairie du Chien and the Jordan have been partially or completely removed by erosion. These buried bedrock valleys can permit fairly direct migration of ground water and contaminants into or out of the aquifer. In addition, the bedrock valleys can affect the confined/unconfined nature of the aquifer, as well as flow gradients and flow directions in the aquifer. Since the PdCJ is such an important aquifer in the region, pumping effects of the nearby wells are significant with respect to the movement of contaminants through the aquifer. Many wells near the Site are open to the PdCJ Aquifer. Some of these wells are high capacity industrial or municipal wells and may have large radii of influence so that they could produce well interference in the vicinity of the Site.

Proximity to drinking water supplies

The other four wells in the Commons Park wellfield are open to the Mt. Simon-Hinckley Aquifer. The integrity of these wells must be maintained. A limited well survey has been conducted and available wells have been sampled, but the extent and direction of the plume has not yet been identified due to the complexity of the 200-300 feet deep aquifer in karst geology. A school is also at risk.

Several other public water supply wells for other municipalities are also located within a four-mile radius of the Site. A few private and many industrial wells also are operated in the area. If discharge of the aquifer to the Mississippi River is identified, the river as a source of water supply for the City of Minneapolis must be evaluated.

Nature of release, Contaminant type, Affected media

In February 1984, trichloroethylene (TCE) was detected in City well no. 9. Subsequent testing detected TCE and several other organic chemicals in wells Nos. 6, 7, 8, and 9. The source is unknown. The affected media is a portion of the Prairie du Chien aquifer with unknown extent, part of which is used for drinking water supply by the City. Public health concern about air contamination due to volatility of the TCE is minimal because any

concentrations in the wells will have been diluted by the city water system to below MCLs normally, and during peaking the concentrations in the water system are anticipated to be a level that would not result in air contamination reaching any level of concern.

Past Response Actions

At the recommendation of the Minnesota Department of Health (MDH), the city of Fridley took well no. 9 out of service in November 1989, due to contamination levels which might cause the water supply to exceed the MCL. Other wells, while at various times indicating contamination from TCE, remained in service. The City has continued to monitor the affected wells as required by MDH.

On February 20, 1991, the Fridley Commons Park Well Field site (Site) numbered MN985701309, with a higher priority, on the Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) inventory of potential hazardous waste sites. The Preliminary Assessment (PA), was completed by Minnesota Pollution Control Agency (MPCA) staff and was approved by the EPA on September 20, 1991. A Screening Site Inspection (SSI) was conducted by MPCA staff on November 5 and 6, 1991. The SSI report, submitted to EPA and approved on July 6, 1992, recommended the Site for an Expanded Site Inspection (ESI). The Site was added to the State of Minnesota's Permanent List of Priorities, or State Superfund List, in June 1992. The 1996 ESI recommended listing on the NPL and more effort to define the source within the limitations of cost.

The MPCA has conducted investigations since the closure of well no. 9 to investigate the contamination and to narrow the range of source possibilities. The most recent report, Evaluation of Ground Water Contamination, Fridley Commons Park Well Field Site, March 1997, recommended an alternative water supply to be planned for implementation during peaking periods, some longer-term investigative techniques, and additional work to locate the source.

Response Actions still required

Peak pumping during high water use in the summer is anticipated to have a high probability of exceedance of the TCE MCL concentrations in the city water distribution system. An alternate water supply is required during that time. Sufficient RI information and a FFS is needed to prepare for the alternate water supply design and implementation.

Periodic examinations of available data and sampling of wells in the area is required to protect public health since little is known about the plume extent and movement.

While over 50 potential contaminant sources have been identified through file searches, an exact source or sources of the contamination has not yet been identified. The possibility exists that proof of PRP liability may never be obtained in spite of numerous monitoring wells and high costs expended for multiple deep monitoring wells. Therefore, the level of effort must be limited to that which is reasonable and cost-effective.

If the source is identified, MPCA will take enforcement action to require a RI/FS and proposed plan for source cleanup and reimbursement for past actions.

The contamination in the aquifer must be addressed with a reasonable RI/FS and ROD, with or without a PRP.

II. STATEMENT OF PURPOSE

As lead agency for the response actions at the site, the MPCA requests the following through this amendment application for the Site:

- Approval of the scope of work for LRI/FFS through the EE/CA report.
- Approval of new funding for LRI/FFS.

Approval of the new project/ budget period.
Approval of the schedule for LRI/FFS.
Approval of the budget for LRI/FFS.

III. LRI/FFS

Site Specific Statement of Work

The SOW for this application will be for the Limited RI and FFS, through the EE/CA report. A detailed scoping document utilizing the model SOW section in the EPA Contracts Management Guidance will be provided within 60 days after the award date for this application.

Estimated costs per task are provided, however the estimate may be revised as the detailed SOW is developed.

A site sign task will be created to provide contacts for obtaining information on activities being conducted at the site and for reporting criminal activities.

Lead site project manager

Maureen Johnson of the MPCA has conducted and continues to conduct coordinated planning of response activities with other State agencies, including the MDH, DNR, and other agencies as appropriate.

Site team members currently include:

Project Manager:	Maureen Johnson
Hydrologist:	Pat Lannon
On-Site Inspector:	Steve Schoff
Secretary:	LaVonne Anderson
Community Relations Officer:	Stacy Casey
Quality Assurance Officer:	Luke Charpentier

Site-Specific Community Relations Plan

Field work will not begin until a CRP is in place. The CRP must be approved by EPA. The MPCA will comply with the community relations requirements described in EPA policy and guidance and in the NCP.

Site-Specific Health and Safety Plan

The MPCA will have a final Health and Safety Plan in place before starting field work, providing for the protection of on-site personnel and area residents as appropriate. The plan will comply with OSHA 29 CFR 1910.120, "Hazardous Waste Operations and Emergency Response."

Quality Assurance

The MPCA will comply with the requirements regarding quality assurance described in 40 CFR 31.45 in developing the Quality Assurance Project Plan and sampling plan. Field work will not begin until EPA approves the QAPP. The plan will comply with the requirements regarding split sampling described in section 104(e)(4)(B) of CERCLA, as amended.

Schedule of Deliverables

CRP
QAPP
Screening of Early Action Alternatives Technical Memorandum
Alternatives Evaluation
Draft EE/CA report to EPA for comment

Semi-Annual progress reports
Quarterly Fiscal Status Reports

Approach

The MPCA will plan, coordinate and conduct the work in a manner consistent with the applicable federal laws and regulations including the NCP, state statutes and rules, the EPA Region 5 Reduced Federal Oversight Policy Statement, the Superfund Memorandum of Agreement between EPA and MPCA, and applicable EPA and MPCA guidance.

The site is being listed on the NPL. This activity is taking place under the MPCA Block Funding Cooperative Agreement with EPA, concurrently with the work described in this amendment under the MSCA. The site does not qualify for early action, however the MPCA and the EPA have agreed that early action is appropriate.

IV. STATEMENT OF WORK

FOR FRIDLEY COMMONS PARK WELL FIELD CONTAMINATION SITE

Fridley, Anoka County, Minnesota

1. PURPOSE

The purposes of this limited remedial investigation/ focussed feasibility study (RI/FS) are to:

1. investigate the nature and extent of contamination at the Fridley Commons Park Well Field Contamination site to the extent needed to develop early action remedial alternatives,
2. develop and evaluate remedial alternatives for assuring safe drinking water for the City of Fridley residents and for protecting the aquifer resource,
3. perform additional investigative studies, such as treatability studies, necessary to complete this phase,
4. implement recommendations of the Extended Site Investigation and the Evaluation of Ground Water Contamination reports to identify PRPs to the extent of reasonable (based on current knowledge) expenditure of public moneys, and
5. monitor nearby drinking water supplies and assure protection of the public health.

The contractor will furnish all necessary personnel, materials, and services needed for, or incidental to, performing the RI/FS, except as otherwise specified herein. The contractor will conduct the RI/FS in accordance with the Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA (U.S. EPA, October 1988).

The main objectives of this limited RI/FS are:

- 1) to assure safe drinking water for the City of Fridley municipal water system and other users of the affected resource, and
- 2) to protect the resource from further degradation.

II. SCOPE

The specific RI/FS activities to be conducted at the Fridley site are segregated into separate tasks.

- o Task 1--Contractor Procurement
- o Task 2--Project Planning
- o Task 3--Community Relations
- o Task 4--Field Investigations
- o Task 5--Sample Analysis/Validation
- o Task 6--Data Evaluation
- o Task 7--Risk Assessment
- o Task 8--Treatability Studies
- o Task 9-- Identification and Screening of Early Action Alternatives
- o Task 10--Analysis of Early Action Alternatives
- o Task 11--Engineering Evaluation/Cost Analysis (EE/CA) Report
- o Task 12--Administrative Record
- o Task 13--Cooperative Agreement and Contract Management

The MPCA shall specify a schedule of activities and deliverables, a budget estimate, and staffing requirements for each of the tasks which are described below. Pursuant to the R5 reduced oversight policy, the EPA will only review and approve the QAPP and the CRP. The MPCA will submit quarterly Fiscal Status Reports and semi-annual progress reports. The EPA must concur on any ROD. The EPA must approve the Statement of Work with a detailed description of tasks or activities to be conducted, the projected costs associated with each task, the number of products to be completed and the semi-annual schedule. The budget shows costs by activity and operable unit. No other interim work deliverables will be required by EPA. The final draft RI and the final draft FS should be submitted to EPA for comment. EPA will address inadequacies and inconsistencies with the NCP, the MPCA will address the concerns, and no resubmittal will be required. After the final RI the MPCA will provide EPA with the Alternatives Array identification and any State ARARs more restrictive than the Federal requirements, and the EPA will provide the Federal ARARs identification. A final proposed Plan will be submitted to EPA for concurrence prior to the opening of the public comment period. The Record of Decision will be submitted to EPA for approval and the state will provide briefings to EPA as necessary. This policy statement specifically takes precedence over any conflicting statements in the following standard SOW.

Task 1--Contractor Procurement

Upon receipt of authorization of the Cooperative Agreement amendment, the MPCA shall complete the necessary steps and follow the appropriate procedures to procure the services of a contractor to conduct the RI/FS for the site. The MPCA shall direct the contractor to begin planning the specific RI/FS activities that will need to be conducted as part of the RI/FS.

Task 2--Project Planning (INCLUDES RAC SOW TASK 1 PROJECT PLANNING AND SUPPORT)

The MPCA's contractor will (1) develop the required project plans to meet the objectives of the RI/FS and (2) initiate subcontractor procurement and coordination with analytical laboratories. The project plans will include a detailed work plan, a quality assurance project plan (QAPP) (to include a field sampling plan (FSP); and a health and safety plan. The MPCA will develop a community relations plan.

The work plan and corresponding activity plans will be submitted by MPCA for review and approval by EPA. Any revisions or additions to any of the project plans will be submitted to EPA for review and approval.

A. Work Plan Preparation

The contractor will review existing information (e.g., topographic maps, aerial photographs, data collected as part of

the NPL listing process, and data collected as part of any other investigation) and conduct a site visit to become familiar with site topography, access routes, and the proximity of potential receptors to site contaminants.

As part of project planning, the contractor and the MPCA will meet to discuss the proposed scope of the project and the specific investigative and analytical activities that will be required, preliminary remedial action objectives and general response actions, potential remedial technologies and the need for or usefulness of treatability studies, potential ARARs associated with the location and contaminants of the site and the potential response actions being contemplated, interim actions, sequencing of tasks to be completed, and whether a temporary site office should be set up to support site work.

The contractor shall prepare a detailed work plan based on this SOW for the RI/FS, using the EPA's Response Action Contractor model SOW. The work plan shall include a project description and an outline of the overall technical approach, complete with corresponding personnel requirements, activity schedules consistent with the SMOA timeframes (eg., document review times), deliverable due dates, and budget estimates for each of the specified tasks.

B. Quality Assurance Project Plan

The contractor shall prepare a QAPP to describe all sampling and analyses planned for the site. The QAPP should address all types of investigations conducted and should include a project description, a project organization chart illustrating the lines of responsibility of the personnel involved in the sampling phase of the project, quality assurance objectives for data such as the required precision and accuracy, completeness of data, representativeness of data, comparability of data, and the intended use of collected data, sample custody procedures during sample collection, in the laboratory, and as part of the final evidence files, the type and frequency of calibration procedures for field and laboratory instruments, internal quality control checks, and quality assurance performance audits and system audits, preventive maintenance procedures and schedule and corrective action procedures for field and laboratory instruments, specific procedures to assess data precision, representativeness, comparability, accuracy, and completeness of specific measurement parameters, and data documentation and tracking procedures. Standard operating procedures for QA/QC that have been established by EPA will be referenced and not duplicated in the QAPP.

C. Field Sampling Plan

The contractor shall prepare a field sampling plan (FSP) that includes an outline of all necessary activities to obtain additional site data. It will contain an evaluation explaining what additional data are required to adequately characterize the site, conduct a baseline risk assessment, and support the evaluation of remedial technologies in the FS. The FSP should clearly state sampling Objectives; necessary equipment; sample types, locations, and frequency; analyses of interest; and a schedule stating when events will take place and when deliverables will be submitted. This document should be submitted as part of the QAPP.

D. Health and Safety Plan

The contractor will develop an HSP on the basis of site conditions to protect personnel involved in site activities and the surrounding community. The plan will address all applicable regulatory requirements contained in 20 CFR 1910.120(i)(2)--Occupational Health and Safety Administration, Hazardous Waste Operations and Emergency Response, Interim Rule, December 19, 1986; U.S. EPA Order 1440.2--Health and Safety Requirements for Employees Engaged in Field Activities; U.S. EPA Order 1440.3--Respiratory Protection; U.S. EPA Occupational Health and Safety Manual; and U.S. EPA Interim Standard Operating Procedures (September, 1982).

The plan will provide a site background discussion and describe personnel responsibilities, protective equipment, health and safety procedures and protocols, decontamination procedures, personnel training, and type and extent of medical surveillance. The plan will identify problems or hazards that may be encountered and how these are to be addressed. Procedures for protecting third parties, such as visitors or the surrounding community, will also be provided. Standard operating procedures for ensuring worker safety will be referenced and not duplicated in the

HSP.

The work plan and corresponding activity plans will be submitted to MPCA, as specified in the contract or as discussed in the initial meeting, for review and approval by MPCA and EPA.

Task 3--Community Relations (INCLUDES RAC SOW TASK 2 COMMUNITY RELATIONS TECHNICAL SUPPORT)

The MPCA will be primarily responsible for community relations activities at this site. The community relations program will be integrated closely with all remedial response activities to ensure community understanding of actions being taken and to obtain community input on RI/FS progress.

The MPCA will prepare a community relations plan on how citizens want to be involved in the process based on interviews with community representatives and leaders by state agency staff. The CRP will describe the types of information to be provided to the public and outline the opportunities for community comment and input during the RI/FS. Deliverables, schedule, staffing, and budget requirements will be included in the plan.

As requested by MPCA, the contractor may provide personnel, services, materials, and equipment to assist MPCA in the development and implementation of the community relations program. Community relations activities for the site will include, but may not be limited to, the following:

- o Establishment and maintenance of a community information repository(s), one of which will house a copy of the administrative record.
- o Preparation and dissemination of news releases, fact sheets, slide shows, exhibits, and other audio-visual materials designed to apprise the community of current or proposed activities.
- o Development and upkeep of a mailing list that includes nearby and interested residents, public interest groups, and elected officials.
- o Arrangements of briefings, press conferences, workshops, and public and other informal meetings.
- o Analysis of community attitudes toward the proposed actions.
- o Assessment of the successes and failures of the community relations program to date.
- o Preparation of reports and participation in public meetings, project review meetings, and other meetings as necessary for the normal progress of the work.

Deliverables and the schedule for submittal will be identified in the community relations plan. The CRP and any revisions or additions to the Community Relations Plan will be submitted to EPA for review and approval before field work begins.

Task 4--Field Investigations (RAC SOW TASK 3 DATA ACQUISITION)

The contractor will conduct those investigations necessary to characterize the site and to evaluate the actual or potential risk to human health and the environment posed by the site. Investigation activities will focus on problem definition and result in data of adequate technical content to evaluate potential risks and to support the development and evaluation of remedial alternatives during the FS.

Site investigation activities will follow the plans developed in Task 1. Strict chain-of-custody procedures will be followed and all sample locations will be identified on a site map. The contractor will provide management and QC review of all activities conducted under this task. Activities anticipated for this site are as follows:

Task 5--Sample Analysis/Validation (RAC SOW TASK 4 SAMPLE ANALYSIS AND TASK 5 ANALYTICAL SUPPORT AND DATA VALIDATION)

The contractor will develop a data management system including field logs, sample management and tracking procedures, and document control and inventory procedures for both laboratory data and field measurements to ensure that the data collected during the investigation are of adequate quality and quantity to support the risk assessment and the FS. Collected data should be validated at the appropriate field or laboratory QC level to determine whether it is appropriate for its intended use. Task management and quality controls will be provided by the contractor. The EPA Contract Lab Program (CLP) should be considered for use as appropriate for analysis of field samples. MPCA will have primary responsibility for ensuring that validation of all data is performed in accordance with the approved QAPP for the site. The contractor will incorporate information from this task into the RI Report.

Task 6--Data Evaluation (RAC SOW TASK 6 DATA EVALUATION)

The contractor will analyze all site investigation data and present the results of the analyses in an organized and logical manner so that the relationships between site investigation results for each medium are apparent. The contractor will prepare a summary that describes (1) the quantities and concentrations of specific chemicals at the site and the ambient levels surrounding the site; (2) the number, locations, and types of nearby populations and activities and, (3) the potential transport mechanism and the expected fate of the contaminant in the environment. As part of this evaluation, A determination will be made as to whether or not all necessary data has been obtained for the site.

Task 7--Risk Assessment (RAC SOW TASK 7 RISK ASSESSMENT)

A. Baseline Risk Assessment

The contractor shall conduct a baseline risk assessment to assess the potential human health and environmental risks posed by the site in the absence of any remedial action in accordance with current guidance and data bases. This effort will involve four components:

- o Contaminant Identification. The contractor will review available information on the hazardous substances present at the site and identify the major contaminants of concern. Contaminants of concern should be selected based on their intrinsic toxicological properties because they are present in large quantities, and/or because they are currently in, or potentially may migrate into, critical exposure pathways (e.g., drinking water).
- o Exposure Assessment. The contractor will identify actual or potential exposure pathways, characterize potentially exposed populations, and evaluate the actual or potential extent of exposure.
- o Toxicity Assessment. The contractor will provide a toxicity assessment of those chemicals found to be of concern during site investigation activities. This will involve an assessment of the types of adverse health or environmental effects associated with chemical exposures, the relationships between magnitude of exposures and adverse effects, and the related uncertainties for contaminant toxicity, (e.g., weight of evidence for a chemical's carcinogenicity).
- o Risk Characterization. The contractor will integrate information developed during the exposure and toxicity assessments to characterize the current or potential risk to human health and/or the environment posed by the site. This characterization should identify the potential for adverse health or environmental effects for the chemicals of concern and identify any uncertainties associated with contaminant(s), toxicity, and/or exposure assumptions.

B. Ecological Risk Assessment

The contractor shall conduct an ecological risk assessment to assess the potential environmental risks posed by the site. This effort will involve the following components:

- o Site Characterization. The contractor will describe aquatic and terrestrial habitats and species potentially exposed to contaminants, summarize available information on the source, nature, and extent of site contamination and potential routes of contaminant migration, and describe any known or suspected effects of site contaminants to biota.
- o Preliminary Screening. The contractor will use data from the site characterization to determine whether site contaminants pose a threat to ecologic receptors. This step should be used to determine the need for additional studies and to provide direction for those studies, if they are needed.
- o Conduct Further Studies. If MPCA and EPA determine that additional studies are needed, the contractor will conduct such studies. Further studies will be based on the particular ecological endpoints selected for the site. The MPCA will submit a separate, detailed work plan to EPA for review and approval for additional ecological studies.
- o Ecological Risk Assessment Report If additional studies are conducted beyond the preliminary screening, the MPCA will submit a draft report to EPA for review and comment. The report will be in the format described in current EPA guidance for conducting ecological assessments. Following receipt of comments from EPA, the MPCA will ensure that a final report is prepared that addresses EPA's comments and will submit the final report to EPA for approval.

The risk assessment will be submitted as part of the RI Report.

Task 8--Treatability Studies (RAC SOW TASK 8 TREATABILITY STUDY AND PILOT TESTING)

A. Determination of Need For Treatability Studies

In consultation with MPCA and EPA, the contractor will examine the need to conduct bench and/or pilot studies to determine the suitability of remedial technologies to site conditions and problems. Technologies that may be suitable to the site should be identified as early as possible to determine whether there is a need to conduct treatability studies to better estimate costs and performance capabilities. Should treatability studies be determined by MPCA and EPA to be necessary, a separate work plan identifying the types and goals of the studies, the level of effort needed, a schedule for completion, and the data management guidelines should be submitted to MPCA and EPA for review and approval.

B. Implementation of Treatability Studies

If it is determined that treatability studies are required at the site, the MPCA will submit a CA amendment to EPA for review and approval.

Task 9 (EE/CA Task 8) Identification and Screening of Early Action Alternatives

The contractor shall identify and screen early action alternatives appropriate to the purpose and scope of the Non-Time Critical Early Action, that comply with ARARs to the maximum extent practicable. The contractor shall investigate only those hazardous waste management alternatives that will remediate or control contaminated media (soil, surface water, ground water, sediments) remaining at the site, as deemed necessary, to provide adequate protection of human health and the environment. The potential alternatives should encompass, as appropriate, a range of alternatives in which treatment is used to reduce the toxicity, mobility, or volume of wastes but vary in the degree to which long-term management of residuals or untreated waste is required, one or more alternatives involving containment with little or no treatment; and a no-action alternative. Alternatives that involve minimal efforts to reduce potential exposures (e.g., site fencing, deed

restrictions) should be presented as "limited action" alternatives.

9.1 Prepare Draft Technical Memorandum. The contractor shall prepare a draft Technical Memorandum presenting the potential alternatives and including the following information:

- ! Establish Remedial Action Objectives. Based on existing information, the contractor shall identify site-specific remedial action objectives which should be developed to protect human health and the environment. The objectives should specify the contaminant(s) and media of concern, the exposure route(s) and receptor(s), and an acceptable contaminant level or range of levels for each exposure route (i.e., preliminary remediation goals).
- ! Establish General Response Actions. The contractor will develop general response actions for each medium of interest by defining contaminant, treatment, excavation, pumping, or other actions, singly or in combination to satisfy remedial action objectives. The response actions should take into account requirements for protectiveness as identified in the remedial action objectives and the chemical and physical characteristics of the site.
- ! Identify & Screen Applicable Remedial Technologies. The contractor shall identify and screen technologies based on the developed general response actions. Hazardous waste treatment technologies should be identified and screened to ensure that only those technologies applicable to the contaminants present, their physical matrix, and other site characteristics will be considered. This screening will be based primarily on a technology's ability to effectively address the contaminants at the site, but will also take into account a technology's implementability and cost. The contractor will select representative process options, as appropriate, to carry forward into alternative development. The contractor will identify the need for treatability testing for those technologies that are probable candidates for consideration during the detailed analysis.
- ! Develop Remedial Alternatives in accordance with NCP.
- ! Screen Remedial Alternatives for Effectiveness, Implementability, and Cost. The contractor shall screen alternatives to identify the potential technologies or process options that will be combined into media-specific or site-wide alternatives. The developed alternatives shall be defined with respect to size and configuration of the representative process options; time for remediation; rates of flow or treatment; spatial requirements; distances for disposal; and required permits, imposed limitations, and other factors necessary to evaluate the alternatives. If many distinct, viable options are available and developed, the Research Engineer will screen the alternatives that undergo the detailed analysis to provide the most promising process options. The alternatives should be screened on a general basis with respect to their effectiveness, implementability, and cost.

8.2 Prepare Final Technical Memorandum. After MPCA/EPA review of the draft Technical Memorandum, the contractor will incorporate MPCA/EPA comments and submit the final Technical Memorandum.

Task 10 (EE/CA Task 9) Analysis of Early Action Alternatives

The contractor shall assess the individual early action alternatives against the criteria of effectiveness, implementability and cost, in addition to a comparative analysis of the options. The contractor shall also recommend and possibly conduct treatability studies at the direction of EPA. MPCA/EPA shall determine the selected early action alternative.

The evaluation shall include: (1) a technical description of each alternative that outlines the waste management strategy involved and identifies the key ARARs associated with each alternative; and (2) a discussion that profiles the performance of that alternative with respect to each of the evaluation criteria. The Research Engineer shall provide a table summarizing the results of this analysis. Once the individual analysis is complete, the alternatives will be compared and contrasted to one another with respect to each of the evaluation criteria.

Task 11 (EE/CA Task 10) Engineering Evaluation/Cost Analysis (EE/CA) Report

The Contractor shall develop and deliver a Engineering Evaluation/Cost Analysis (EE/CA) report that accurately establishes the site characteristics such as media contaminated, extent of contamination, and the physical boundaries of the contamination. Pursuant to this objective, the contractor shall obtain only the minimally essential amount of detailed data necessary to determine the key contaminant(s) movement and extent of contamination. The key contaminant(s) must be selected based on persistence and mobility in the environment and the degree of hazard. The key contaminant(s) identified in the EE/CA shall be evaluated for receptor exposure and an estimate of the key contaminant(s) level reaching human or environmental receptors must be made. The contractor shall use existing standards and guidelines such as drinking-water standards, water-quality criteria, and other criteria accepted by the EPA as appropriate for the situation may be used to evaluate effects on human receptors who may be exposed to the key contaminant(s) above appropriate standards or guidelines.

- 11.1 Draft EE/CA Report. In accordance with the schedule developed in the NTCEAS work plan, the contractor shall submit a draft EE/CA Report. The EE/CA Report shall follow the format specified in Attachment #1.
- 11.2 Final EE/CA Report. After EPA review of the draft EE/CA Report, the contractor will incorporate EPA comments and submit the final EE/CA Report.

Task 12--Administrative Record (INCLUDES RAC SOW TASK 15 ADMINISTRATIVE RECORD)

During the RI/FS phase, the MPCA will establish an site Administrative Record (AR) for the selection of the response actions in accordance with Section 113 of CERCLA. The AR is a subset of the site file which contains all the documents that were considered or relied upon in the selection of remedy for response actions, and acts as a vehicle for public participation. The MPCA will be responsible for establishing the site AR and ensuring that all documents, whether they support or oppose the selected action, forming the basis for the selection of the response action are available to the public at or near the site prior to the commencement of the public comment period, at a minimum.

The MPCA shall be responsible for proper compilation and maintenance of the AR file which is crucial because under Section 113 (j) of CERCLA, judicial review of issues concerning the adequacy of any response action is limited to the information contained in the AR. The MPCA shall compile and maintain the AR in accordance with the Final Guidance on Administrative Records for Selecting CERCLA Response Actions (December 1990). The MPCA shall submit a draft AR index to EPA for review and comments.

Task 13--Cooperative Agreement and Contract Management

The MPCA shall conduct all actions necessary to assure that both agency and contractor activities are within the Statement of Work, schedule and budget of the CA. At a minimum, the MPCA shall:

A. Contract Management

The MPCA shall perform contract management activities, including the following:

- " overseeing field work, as appropriate;
- " tracking contractor progress and deliverables against the approved CA schedule;
- " evaluating the quality of contractor work and deliverables; and
- " reviewing contractor invoices, expenditure reports and monthly progress reports. The MPCA shall ensure

that the contractor monthly progress reports contain information on the following items, at a minimum:

- Status of work and the progress to date.
- Percentage of the work completed and the status of the schedule.
- Difficulties encountered and corrective actions to be taken.
- The activities in progress.
- Activities planned for the next reporting period.
- Any changes in key personnel.
- Actual expenditures (including fee) and direct labor hours for the reporting period and for the cumulative term of the project.
- Projection of expenditures needed to complete the project and an explanation of significant departures from the original budget estimate.

B. Cooperative Agreement

The MPCA shall perform Cooperative Agreement management activities, including the following:

- " Tracking CA deliverables against the approved CA schedule.
- " Performing a quality check on contractor produced documents prior to submitting the document to EPA for review and approval.
- " Developing and maintaining an Administrative Record, including an Index, for the site.
- " Identifying potential problems and/or delays which are likely to cause a deviation from the approved CA Statement of Work and schedule. In such cases, the MPCA must notify EPA immediately, propose corrective measures, and obtain EPA's prior approval for the corrective measures.
- " Keeping the CA current by submitting amendment applications whenever there is a change in the Statement of Work, schedule, budget, timeframe, etc.
- " Tracking CA expenditures.
- " Preparing and submitting semi-annual progress reports, Financial Status Reports and a Close-out Report.

V. PROJECT/ BUDGET PERIOD

This application requests a project/ budget period of October 1, 1998 through September 30, 2000, for conduct of the LRI/FFS through the EE/CA report.

VII. SCHEDULE

A more current revised schedule will be submitted to EPA with the semi-annual progress report upon the contractor's preparation of the site specific work plan and schedule.

VIII. FUNDING

This is a new site for which MPCA has requested planned funding through the EPA's SCAP and SACM process.

IX. BUDGET

Estimated budget tables are provided. Revisions are anticipated upon the contractor's work plan submittal.

EE/CA Report Format

Attachment 1

**Fridley Commons Park Well Field
Engineering Evaluation/Cost Analysis Report
(Date)**

- 1 Executive Summary
- 2 Site Characterization
 - 2.1 Site Description and Background
 - 2.1.1 Site Location and Physical Setting
 - 2.1.2 Geology/Hydrology/Hydraulics
 - 2.1.3 Surrounding Land Use and Populations
 - 2.1.4 Sensitive Ecosystems
 - 2.1.5 Meteorology
 - 2.2 Previous Early actions
 - 2.3 Source, Nature, and Extent of Contamination
 - 2.4 Analytical Data
 - 2.5 Streamlined Risk Evaluation
- 3 Identification of Early Action Objectives
 - 3.1 Determination of Early Action Scope
 - 3.2 Determination of Early Action Schedule
 - 3.3 Identification of and Compliance with ARARs
 - 3.4 Planned Remedial Activities
- 4 Identification and Analysis of Early Action Alternatives
- 5 Detailed Analysis of Alternatives
 - 5.1 Effectiveness
 - 5.1.1 Overall Protection of Public Health and the Environment
 - 5.1.2 Compliance with ARARs and Other Criteria, Advisories, and Guidance
 - 5.1.3 Long-Term Effectiveness and Permanence
 - 5.1.4 Reduction of Toxicity, Mobility, or Volume Through Treatment
 - 5.1.5 Short-Term Effectiveness
 - 5.2 Implementability
 - 5.2.1 Technical Feasibility
 - 5.2.2 Administrative Feasibility
 - 5.2.3 Availability of Services and Materials
 - 5.2.4 State and Community Acceptance
 - 5.3 Cost
 - 5.3.1 Direct Capital Costs
 - 5.3.2 Indirect Capital Costs
 - 5.3.3 Long-Term Operation and Maintenance
- 6 Comparative Analysis of Early Action Alternatives
- 7 Schedule for EE/CA Submission

1 Executive Summary

The Executive Summary shall provide a general overview of the contents of the EE/CA. It shall contain a brief discussion of the site and the current and/or potential threat posed by conditions at the site. It shall also identify the scope and objectives of the early action and the alternatives.

2 Site Characterization

The EE/CA shall summarize available data on the physical, demographic, and other characteristics of the Site and the surrounding areas. Specific topics which shall be addressed in the site characterization are detailed below. The site characterization shall concentrate on those characteristics necessary to evaluate and select an appropriate remedy.

2.1 Site Description and Background

The site description includes current and historical information. The following types of information shall be included, where available and as appropriate, to the site- specific conditions and the scope of the early action.

- 2.1.1 Site Location and Physical Setting
- 2.1.2 Present and Past Facility Operations
- 2.1.3 Geology/Hydrology/Hydraulics
- 2.1.4 Surrounding Land Use and Populations
- 2.1.5 Sensitive Ecosystems
- 2.1.6 Meteorology

2.2 Previous Early Actions

The site characterization section shall also describe any previous early actions at the site. Previous information, if relevant, shall be organized as follows:

- * The scope and objectives of the previous early action
- * The amount of time spent on the previous early action
- * The nature and extent of hazardous substances, pollutants, or contaminants treated or controlled during the previous early action
- * The technologies used and/or treatment levels used for the previous early action.

2.3 Source, Nature and Extent of Contamination

This section shall summarize the available site characterization data for the Fridley CP site, including the location(s) of the hazardous substance(s), pollutant(s), or contaminant(s); the quantity, volume, size or magnitude of the contamination; and the physical and chemical attributes of the hazardous pollutant(s) or contaminant(s).

2.4 Analytical Data

This section shall present the available data.

2.5 Streamlined Risk Evaluation

The risk assessment shall focus on the ground water medium as a water supply for Fridley Commons Park Wellfield and other users. It shall use data from the site to identify the chemicals of concern, provide an estimate of how and to what extent human and/or environmental receptors might be exposed to these chemicals, and provide an assessment of the health effects associated with these chemicals. The evaluation shall project the potential risk of health problems occurring if no cleanup action is taken at the site. The risk evaluation shall be conducted in accordance with U.S. EPA guidance including, at a minimum: Risk Assessment Guidance for Superfund (RAGS) (EPA/540/1-89/002, December 1989). The ecological risk evaluation shall also be conducted in accordance with U.S. EPA guidance including, at a minimum: Risk Assessment Guidance for Superfund Volume II Environmental Evaluation Manual, (EPA/540/1-89/001, March 1989).

3 Identification of Early Action Objectives

The EE/CA shall develop early action objectives, taking into consideration the following factors:

- * Prevention or abatement of actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances, pollutants, or contaminants;
- * Prevention or abatement of actual or potential contamination of drinking water supplies or sensitive ecosystems;
- * Mitigation or abatement of other situations or factors that may pose threats to public health, welfare, or the environment.

3.1 Determination of Early Scope

The EE/CA shall define the broad scope and specific objectives of the early action and address the protectiveness of the early action. The EE/CA shall discuss how the goals of the early action are consistent with any potential long-term remediation.

3.2 Determination of Early Action Schedule

The general schedule for early action activities shall be developed, including both the start and completion time for the early action.

4 Identification and Analysis of Early Action Alternatives

Based on the analysis of the nature and extent of contamination and on the cleanup objectives developed in the previous section, a limited number of alternatives appropriate for addressing the early action objectives shall be identified and assessed. Whenever practicable, the alternatives shall also consider the CERCLA preference for treatment over conventional containment or land disposal approaches.

Based on the available information, only the most qualified technologies that apply to the media or source of contamination shall be discussed in the EE/CA. The use of presumptive remedy guidance may also provide an immediate focus to the identification and analysis of alternatives. Presumptive remedies involve the use of remedial technologies that have been consistently selected at similar sites or for similar contamination.

A limited number of alternatives, including any identified presumptive remedies, shall be selected for detailed analysis. Each of the alternatives shall be described with enough detail so that the entire treatment process can be understood. Technologies that may apply to the media or source of contamination shall be listed into the EE/CA. In some cases, it may be more appropriate to consider only a category of technologies. For example, on-site incineration would be considered a technology category that may include rotary kiln, fluidized bed, etc.

The preliminary list of alternatives to address the site shall consist of one or more alternatives from each of the

1
following generic early alternative categories:

The No Action alternative is not included for evaluation in the EE/CA which must address the endangerment.

5 Detailed Analysis of Alternatives

Defined alternatives are evaluated against the short- and long-term aspects of three broad criteria: effectiveness, implementability, and cost.

5.1 Effectiveness

The effectiveness of an alternative refers to its ability to meet the objective regarding the scope of the early action. The "Effectiveness" discussion for each alternative shall evaluate the degree to which the technology would mitigate threats to public health and the environment. Criteria to be considered include:

5.1.1 Overall Protection of Public Health and the Environment

How well each alternative protects public health and the environment shall be discussed in a consistent manner. Assessments conducted under other evaluation criteria, including long-term effectiveness and permanence, short-term effectiveness, and compliance with ARARs shall be included in the discussion. Any unacceptable short-term impacts shall be identified. The discussion shall focus on how each alternative achieves adequate protection and describe how the alternative will reduce, control, or eliminate risks at the site through the use of treatment, engineering, or institutional controls.

5.1.2 Compliance with ARARs and Other Criteria, Advisories, and Guidance

The detailed analysis shall summarize which requirements are applicable or relevant and appropriate to an alternative and describe how the alternative meets those requirements. A summary table may be employed to list potential ARARs. In addition to ARARs, U.S. EPA may identify other Federal or State advisories, criteria, or guidance to be considered (TBC) for a particular release. TBCs are not required by the NCP; rather, TBCs are meant to complement the use of ARARs.

5.1.3 Long-Term Effectiveness and Permanence

This evaluation assesses the extent and effectiveness of the controls that may be required to manage risk posed by treatment residuals and/or untreated wastes at the site. The following components shall be considered for each alternative: magnitude of risk, and, adequacy and reliability of controls.

5.1.4 Reduction of Toxicity, Mobility, or Volume Through Treatment

U.S. EPA's policy of preference for treatment requires evaluation based upon the following subfactors for a particular alternative:

- * The treatment process(es) employed and the material(s) it will treat
- * The amount of the hazardous materials to be destroyed or treated
- * The degree of reduction expected in toxicity, mobility, or volume
- * The degree to which treatment will be irreversible
- * The type and quantity of residuals that will remain after treatment
- * Whether the alternative will satisfy the preference for treatment

5.1.5 Short-Term Effectiveness

The short-term effectiveness criterion addresses the effects of the alternative during implementation before

the early action objectives have been met. Alternatives shall also be evaluated with respect to their effects on human health and the environment following implementation. The following factors shall be addressed as appropriate for each alternative:

- * Protection of the Community
- * Protection of the Workers
- * Environmental Impacts
- * Time Until Response Objectives are Achieved

5.2 Implementability

This section is an assessment of the implementability of each alternative in terms of the technical and administrative feasibility and the availability of the goods and services necessary for each alternative's full execution. The following factors shall be considered under this criterion.

5.2.1 Technical Feasibility

The degree of difficulty in constructing and operating the technology; the reliability of the technology, the availability of necessary services and materials; the scheduling aspects of implementing the alternatives during and after implementation; the potential impacts on the local community during construction operation; and the environmental conditions with respect to set-up and construction and operation shall be described. Potential future remedial actions shall also be discussed. The ability to monitor the effectiveness of the alternatives may also be described.

5.2.2 Administrative Feasibility

The administrative feasibility factor evaluates those activities needed to coordinate with other offices and agencies. The administrative feasibility of each alternative shall be evaluated, including the need for off-site permits, adherence to applicable nonenvironmental laws, and concerns of other regulatory agencies. Factors that shall be considered include, but are not limited to, the following: statutory limits, permits and waivers.

5.2.3 Availability of Services and Materials

The EE/CA must determine if off-site treatment, storage, and disposal capacity, equipment, personnel, services and materials, and other resources necessary to implement an alternative shall be available in time to maintain the early action schedule.

5.2.4 State and Community Acceptance

U.S. EPA shall consider and address State and community acceptance of an alternative when making a recommendation and in the final selection of the alternative in the Action Memorandum.

5.3 Cost

Each alternative shall be evaluated to determine its projected costs. The evaluation should compare each alternative's capital and operation and maintenance costs. The present worth of alternatives should be calculated.

5.3.1 Direct Capital Costs. Costs for construction, materials, land, transportation, analysis of samples, treatment shall be presented.

5.3.2 Indirect Capital Costs. Cost for design, legal fees, permits shall be presented.

5.3.3 Long-Term Operation and Maintenance Costs. Costs for maintenance and long-term monitoring shall

be presented.

6 Comparative Analysis of Early Action Alternatives

Once early action alternatives have been described and individually assessed against the evaluation criteria described in Section 5, above, a comparative analysis shall be conducted to evaluate the relative performance of each alternative in relation to each of the criteria. The purpose of the analysis shall be to identify advantages and disadvantages of each alternative relative to one another so that key trade offs that would affect the remedy selection can be identified.

7 Schedule for EE/CA Submission

The schedule should comply with the Cooperative Agreement schedule.